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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,125	12/26/2000	Kiyoyuki Chinzei	F0284 KWI	4997

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EXAMINER

BINDA, GREGORY JOHN

ART UNIT

PAPER NUMBER

3679

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5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/749,125

Applicant(s)
Chinzei

Examiner
Greg Binda

Art Unit
3679



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Dec 26, 2000
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Dec 26, 2000 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other:

Art Unit: 3679

Information Disclosure Statement

1. The information disclosure statement filed Apr 16, 2001 fails to comply with the provisions of 37 CFR 1.98(b) because the reference titled "MR Compatible Surgical Assist Robot" is not identified with a publication date. The reference has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

2. Please note on the PTO-1449 of the information disclosure statement filed Apr 16, 2001, that the correct description of the pages received in the reference titled "MR Compatibility of Mechatronic . . ." is 1020-1030. Appropriate pen and ink correction has been made to that effect.

Drawings

3. The drawings are objected to as failing to comply with:

a. 37 CFR 1.84(p)(4) because:

i. Reference character "3" has been used to designate both an outer wheel of bearing P_1 and an outer wheel of bearing P_2 (see page 4, lines 8-12).

Art Unit: 3679

ii. Reference character "2" has been used to designate both an inner wheel of bearing P₁ and an inner wheel of bearing P₂ (see page 4, lines 8-12).

b. 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: x', y', z'.

4. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because:

a. The specification appears to be a literal translation into English from a foreign document and is replete with grammatical and idiomatic errors. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

b. Page 1, line 14 includes "assist robots are promising to be used in MR/T". The Office is unaware of robots that make promises.

c. Page 1, line 24, "3" should be changed to "three".

d. Page 2, line 14, the "sentence" that starts here is a fragment, not a sentence.

Art Unit: 3679

e. The following reference characters appear in the description but none ever references a particular entity/element/parameter: x' , y' , z' , x_2 , y_2 , z_2 , x_1 , y_1 , z_1 , r , θ , and Φ .

i. Where are angles θ , and Φ measured? Between what lines is each measured?

ii. What does reference character r , x' , y' , z' , x_2 , y_2 , z_2 , x_1 , y_1 , or z_1 indicate?

Claim Objections

6. Claims 3 & 6 are objected to because in line 2 of each claim, the limitation “robot arm” should be recited as “a robot arm”.

Claim Rejections - 35 U.S.C. § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Line 1 of each of claims 1-6 recites the limitation, “the position” but does not recite the element(s) to which this position pertains (i.e. the position of what?).

b. Line 1 of each of claims 1-6 recites the limitation, “the direction” but does not recite the element(s) to which this direction pertains (i.e. the direction of what?).

Art Unit: 3679

c. Line 1 of each of claims 1 & 4 recites the limitation, "the axis" but does not recite the element(s) to which this axis pertains (i.e. the axis of what?).

d. Claims 2 & 5 are each directed to both an apparatus (see "link mechanism" in line 1) and the method step(s) of using the apparatus (see "determined by defining" in line 3). A single claim which claims both an apparatus and the method of using the apparatus is indefinite because it is not clear what applicant regards as his invention. *Ex parte Lyell*, 17 USPQ2d 1548 (Bd. Pat App & Inter. 1990). See also MPEP § 2173.05(q).

e. In claims 3 & 6, the phrase "in particular" renders each claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

f. Claims 3 & 6 each recite the limitation "the end effector" in line 3. There is insufficient antecedent basis for this limitation in the claims.

g. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "end effector" in claims 3 & 6 is used by the claims to mean "a rod and its supports," while the accepted meaning is "a device connected to the distal end of a robot's arm which carries out the robots intended function" (see USPTO class 901 definition).

Art Unit: 3679

Claim Rejections - 35 U.S.C. § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 2 & 5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A single claim which claims both an apparatus and the method of using the apparatus is directed to neither a “process” nor a “manufacture” but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Ex parte Lyell*, 17 USPQ2d 1551 (Bd. Pat App & Inter. 1990). See also MPEP § 2173.05(q).

Claim Rejections - 35 U.S.C. § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Art Unit: 3679

12. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayshi et al, US 5,853,328. Fig. 8 shows a link mechanism comprising: an axial rod A and two spherical bearings D & B, the two bearings being capable of changing positions. The motion of the bearing D relative to the axial rod A along the axis is constrained and the other bearing B can travel along the axial rod A.

13. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyake, JP 61-201918. Fig. 1 shows a link mechanism comprising: an axial rod 3 and two spherical bearings 6-10, the two spherical bearings being capable of changing positions. The motion of spherical bearing 10a relative to the axial rod 3 along the axis is constrained and the other spherical bearing 10b can travel along the axial rod 3.

14. Claims 1-6 are rejected under 35 U.S.C. 102⁵(e) as being anticipated by Tampier, FR 761,431. Fig. 8 shows a link mechanism comprising: an axial rod 68 and two spherical bearings 70, 71 & 59, 60, the two bearings being capable of changing positions. The motion of the bearing 70, 71 relative to the axial rod 68 along the axis is constrained and the other bearing 59, 60 can travel along the axial rod 68.

Art Unit: 3679

15. Claims 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohli et al, US 4,806,068. Fig. 2 shows a link mechanism comprising: an axial rod 22 and two supports 24 & 38, the two supports being capable of changing positions. The motion of support 24 relative to the axial rod 22 along the axis is constrained and the other support 38 can travel along the axial rod 22. Fig. 1 shows that the link mechanism is part of an end effector 10.

16. Claims 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker, US 2,124,006. Figs. 1 & 2 shows a link mechanism comprising: an axial rod 24 and two supports 20, 21 & 27, the two supports being capable of changing positions. The motion of support 20, 21 relative to the axial rod 24 along the axis is constrained and the other support 27 can travel along the axial rod 24. On page 2, col. 2, lines 15+ and in Fig. 1, the link mechanism is disclosed as part of an end effector.

17. Claims 4-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hendrickson, US 1,149,762.

18. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Pritschow et al, US 5,916,328. Fig. 1 shows a link mechanism K comprising: an axial rod VE and two spherical bearings P & P', the two bearings being capable of changing positions. The motion of the bearing P relative to the axial rod VE along the axis is constrained and the other bearing P' can travel

Art Unit: 3679

along the axial rod VE. In col. 5, lines 54-56 the link mechanism K is disclosed as part of an end effector.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Akeel and Pana each show a link mechanism comprising an axial rod and spherical bearings.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached Tuesday through Friday from 9:30 am to 7:00 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne, can be reached on (703) 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 (before final), (703) 872-9327 (after final) and (703) 872-9325 (customer service).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.


Greg Binda
Patent Examiner